

# The Great Indian Bustard [*Choriotis nigriceps* (Vigors)] at the Nest

BY

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(With two plates)

On 13 August 1961 I arrived in the typical Great Indian Bustard, *Choriotis nigriceps* (Vigors), habitat of south Saurashtra. The rains had been early this year with spells of hot sunshine; the country looked green and clear water flowed in the numerous streams. The habitat consists of low undulating hilly country studded with bushes and covered with various grasses and monsoon plants. With a foundation of trap and basalt and quartz, this strip of grassland extends for about three miles. It is intersected by cart tracks and is hemmed in by fields of groundnut. On the outskirts lie scattered villages, bordered by extensive cultivation, the fields being divided by grass hedges. A river flows close to a main metalled road leading to a town.

It was a bright sunny day with cumulus clouds—a break in the weather that was ideal for me. This grassland where bustard is known to remain throughout the year was protected from grazing as it was administered by the Gujarat State Forest Department and was reserved for the planting of forest trees.

With the help of the Forest staff a nest was soon discovered. At 13.00 hours, alighting from a jeep station wagon at the margin of the grassland where a cart road skirted cultivation, we proceeded on foot for half a mile. Fifty yards away a pile of outcropping stones, resembling the inverted keel of a boat, stood out prominently in a slight depression—I shall refer to this as the boat-pile. The terrain formed a raised grassland, from which emanated shallow gullies containing innumerable *Zizyphus* bushes, some *Balanites* saplings, and young *Acacia* amidst a sea of short grasses with patches of tall thin grasses mixed with many species of small plants with variously coloured flowers.

From the boat-pile, which pointed north and south, the ground sloped easily eastward through shallow gullies and eroded clefts to end in a bowl of grassland full of tall grass and a stand of stunted trees. To the west it rose for about 100 yards and then dropped in undulations to reach a road and a river about 600 yards away. On the south a belt of stony country stretched past knolls and gullies for about 400 yards and veering eastward merged in a chain of low hills, intersected by cartroads and bordered here and there by cultivation, through which narrow ravines trickled with water. To the north, close behind the boat-pile, was a conspicuous rise which sloped gently down to groundnut fields, and a separate tongue of bare stony hills reached across a ravine into grazing land. Near the base of the rise a small *khakra* bush (*Butea monosperma*) and an *Acacia arabica* sapling provided cover for the bustard. Scarring the entire grassland reserve were artificial scrapes for seeds of forest trees, many of which had germinated. On the south-west at a distance a village could be seen against a background of higher ranges of forested hills. This then is the nesting habitat of the Great Indian Bustard.

Falling into single file the Forest Guard and I proceeded silently till, following his signal with my eyes, I saw about twenty yards away the slow retraction of a bustard's snake-like head and neck as it watched our approach. Passing on without stopping, I could with difficulty make out the hen bustard sitting tight on the nest. Her brown upper parts blended well with two outcropping rocks and a near-by boulder, making detection very difficult. The nest was on the eastern side of the boat-pile, near its top, and could only be seen from this side. Circling twice around the nest in a spiral approach we got to within 25 feet, but I did not try to take a photograph for fear of flushing a bird sitting on its egg. Leaving an observer, 'A', I returned to camp.

At 17.30 hours I was back with observer 'B'. The hen bustard having left five minutes before our arrival, all three of us walked to the nest—a typical bustard-scrape, oval in shape and about a foot in length, pointing north-south, in short and long thin grass with *Zizyphus* bushes and a dry leafless plant close by. It contained one egg, greenish-brown, splashed with reddish brown lying lengthwise of the scrape. The slight depth of the scrape, the slope of the boat-pile, and the surrounding vegetation prevented the egg being seen from more than fifteen feet away. So some cutting of the grass would be necessary for the bird and the egg to be photographed together. The egg had

been seen ten days prior to my arrival, so incubation must have been well advanced. A used cart track passed about 20 yards east of the boat-pile, and was used morning and evening by the cultivators working in their fields. Also, we were informed that earlier in the season, when the forest guards and labourers were planting seed, at least half a dozen bustards including the cock had been seen feeding and the cock had displayed close to them. So it appeared possible that the bustard would tolerate our 'gardening'. Selecting a site for the hide about 60 yards east of the boat-pile and across the cart track, I turned back to watch the bird, which in the meantime had returned to its nest unknown to us. At 17.45 hours the bustard left the nest and moved north over the rise after feeding steadily and calmly. Seizing the opportunity, we quietly erected the hide and camouflaged it with cut grass. Then we retreated south along the cart track to a small rise 200 yards away, which I chose as my observation post. From here we could see the movements of the bird as it left the nest and as it wandered to feed in the central depression of the sloping ground. It also controlled the cart track, so that one could from here request persons using the cart track to circle round and avoid disturbing the bird. Outside the depression it was not possible to watch the bird without posting a large number of observers, which would be undesirable with a suspicious bird like the bustard. A thick *ber* bush at the top of the observation post offered cover to an observer lying down or sitting crouched, and gave him an opportunity to retire undiscovered if necessary.

Making a scrape like that of a bustard close to the *ber* bush, I lay down and silently watched through the binoculars. At 18.04 hours the hen bustard walked briskly from the rise behind the boat-pile; it moved down the slope, turning its head left and right in true bustard fashion, the neck outstretched and held high, the bill pointing slightly upwards. I could see the unbroken dark pectoral band as the bird walked quite fast straight towards the nest. Half way down the slope, when almost in the shallow pocket in which the boat-pile lay, it stopped and faced sideways, standing with neck held high and slightly behind the vertical neck line. This pose is a sign of alarm and, without hearing the usual short *hook* call, I knew I had been seen. My head must have been cutting the sky-line and been fairly conspicuous. Embarrassed but patient, I waited to see the reaction. Remaining motionless for a minute or more, the bird crept at right angles to me, the head held low and just in line with the

back, the neck in a wide loop or U, the whole body crouching, to the solitary *khakra* bush. Taking cover behind it, with only the head and a small portion of the neck visible, and the head facing sideways, the bird remained for well over 10 minutes, and then withdrew its head. A quarter of an hour later it suddenly appeared behind a long tuft of thin grass and gazed steadily for some time; then it skulked back to the *khakra* bush, and watched me suspiciously with only the head visible. For nearly 45 minutes it made no attempt to approach the nest. As the bird was watching me intently and with suspicion, I ducked and withdrew. 15 minutes later I crept back and, seeing no bird, thought it had moved to the nest. Suddenly I saw a movement, and training my glasses in that direction I saw the bustard, which again began to slink away, turning its head sideways and looking at me. This action appeared deliberate and it surprised me that the bird should act in this manner at such great distance, when one could hardly see it with the naked eye. Failing in its ruse to draw me out, the bird hid behind the *khakra* bush and again began to watch me. I made no movement but watched the antics of the bird with a thrill, suspecting at the same time that there might be two birds, one with young and the other on the nest. Soon after sunset, when there remained a bright glow, I turned back to camp.

On 14 August observers 'A' and 'B' watched from the observation post from before sunrise while I was engaged with other observations in the vicinity.

At 8.30 hours the hen bustard left the nest and walked slowly over the rise to the north, picking up food here and there. Flocks of house crows and cattle egrets were seen flying over the fields and grassland. At 10.15 hours the bustard approached the nest and, seeing 'A', crouched low and repeated its behaviour of the previous evening. 'A' kept out of view, and when he looked three-quarters of an hour later found that it had settled on the nest. At 14.35 hours the bird left the nest and walking westwards began feeding, mainly on grasshoppers. Half an hour later it walked back to the boat-pile and was seen to remain there. At first it was presumed to have settled on the nest, but watching revealed the bird on the ridge of the boat-pile. When I took over at 4 p.m. the bird was on the nest. I watched attentively until 17.10 hours when I saw it circling the boat-pile and realised that it had crept off the nest when I was not looking. Slinking behind bushes and grass tufts in zigzag manner it returned to the boat-pile, where it waited for a considerable time, apparently watching the hide. Then without ceremony it slowly walked

The Great Indian Bustard, *Choriotis nigriceps* (Vigors)



.....walked into the nest without hesitation



.....straddled the egg

( Photos : R. S. Dharmakumarsinhji )

The Great Indian Bustard, *Choriotis nigriceps* (Vigors)



Straddles the eggs sitting on its tarsi



.....slowly raised its neck and head in stages

( Photos : R. S. Dharmakumarsinhji )

to the nest-site, and yet I did not see it settle, having I imagine crouched low when entering the nest. The next thing I saw was the head and neck appear like a snake above the nest-site. Observer 'A' continued the watch from this stage till after dark, and at 20 hours the hide was moved as silently as possible to a pre-selected site across the cart track to within 90 feet of the nest.

On 15 August again observers 'A' and 'B' took over while I went to investigate another portion of the grassland. As before, flights of house crows and cattle egrets flew over in the early morning, farmers went past to their fields with their bullocks, and labourers worked in the adjoining fields. One house crow, noticing observer 'A', circled over his head cawing. Then another house crow came and both searched for food. At 9.05 hours when the crows departed the bustard left the nest and walked to the feeding ground across 'north rise'. As soon as the bird had disappeared, 'A' placed 'B' on duty and, walking across, discovered that the egg was not visible from the hide and that the hide would have to be moved closer to the nest.

At 10.20 hours observer 'B' saw the bird walk briskly towards the boat-pile from 'north rise'. After crouching and steadily staring at the hide it began false feeding and preening itself, and then slunk slowly closer to the boat-pile. Realising that the bird had become very suspicious 'B' kept out of view. The weather was warm and clouds were blanketing the sky. At 11.35 hours some travellers passed by. In the meantime the bird settled on the nest. At 15.00 hours it left the nest and, after feeding some 150 yards away to the west and north, returned to the boat-pile at 16.20 hours in the usual slow approach and then moved secretly to the nest and settled down without betraying itself. Only when the neck was raised could the observer tell that it had settled. In the evening the bustard remained on the nest until almost sunset. At 19.05 hours, having seen the bird depart over 'north rise', 'A' and 'B' went forward and moved the hide to about 40 feet from the nest. Then they returned to the observation post, whence 'A' watched the bird enter the boat-pile and then as it grew dark he left his post.

On the following morning we arrived at the observation post at dawn. At 8.45 hours the bustard left the nest to feed. When it was out of sight I approached and discovered that I could not see the egg from inside the hide. The hide was therefore moved to a distance of  $33\frac{1}{2}$  feet from the nest. While I was arranging the camera and settling myself comfortably the bustard returned and passed from bush to bush watching us closely but I continued the necessary work.

In spite of intervening cover it kept about 80 yards from us. At 10.45 hours I was ready but the curiosity of a wandering house crow had been aroused; it had spied the egg and was cawing over our heads. We tried hard to scare it away but failed. Then an idea struck me. I entered the hide and told the men to wait a little and then leave me as if they were by themselves and to move away talking, watching at the same time to see whether the crow would follow. The crow, which had settled some distance away, followed the two men as I had hoped. At 11.25 hours I heard some chirping above the hide and discovered that a pair of Whitethroated Munias was perched on top of the hide, the grass on which had dried and made it a conspicuous patch of brown. The munias apparently were searching for a nesting site. They troubled me for some time, entering the opening where my telephoto-lens was placed, peeping into the lens, and twice alighting inside the lens hood.

At 11.35 hours I saw the bustard about 60 yards away looking fixedly at the hide. Then it moved slowly to the side, stopping and walking slowly with head and neck erect. Looking at the observation post, where 'A' and 'B' were on duty, I was disgusted to see the outline of a human head on the sky-line, so conspicuous that no bustard could miss noticing it. As time passed and the bustard did not come to the nest the sight of the man's head became an eyesore. It was 12.15 hours when I heard a caw and saw a house crow alight six feet from the nest. I felt like leaping out of the hide and was about to shout when, to my surprise and relief, the hen bustard rushed out from the side and attacked. With feathers puffed out, the mantle, crown, and neck feathers raised, wings spread sideways in shield-like manner, and the tail fully cocked, it lunged forward with bill and neck outstretched and drove away the crow. Then it turned to the nest and stood defiantly over the egg, with evident anger in its eyes, seemingly too irritated to settle down on the egg. The crow, realising that its game was up, flew away, while the bustard quietly retreated eyeing the hide with suspicion. The sky had become overcast with the light fluctuating between cloudy-bright to dull. At 12.45 hours the bustard walked into view from the right hand side, approached hesitatingly, stopped, and scanning the countryside with head and neck held erect stood for a couple of minutes a few yards from the nest. I turned my head for a moment to peer at the observation post; no head protruded. The bird came closer and walked into the nest without hesitation. Promptly, I took photographs. The bird walked up to the egg, turned round to face



right, then straddled the egg, paused for a moment, and settled down. Four rapid photographs were taken in succession on 35 mm. Kodak Tri-X film at 1/250 of a second with a tele-lens of 300 mm. focal length. It is not difficult to photograph a bustard incubating, but I had at last achieved my ambition of taking it in the act of entering its nest with the egg visible in the picture, a feat which I believe no one else has yet achieved.

After settling down the bird kept its head and neck pressed down on its mantle and maintained a frozen attitude. Slowly, the head moved slightly from side to side; I even saw the eyeballs move with a look in the eyes of a frightened rather than an angry bird. Rain-laden clouds began to gather and to darken the sky. The wind was blowing towards me in gusts. At 13.30 hours the bird slowly raised its neck and head in stages until it was almost fully stretched up like a cobra with hood open and erect body. When the bird faced me with bill pointing slightly upwards, it was reminiscent of an Ostrich and also reminded me of the pose of a Little Bittern when attempting to conceal itself in front of danger. I took two more photographs, and that was all, as by some fate the camera shutter jammed. Nevertheless, I continued my observations. But for the constant turning of the head and slight neck movement by which it kept a ceaseless watch over its surroundings, the bird did not move. At 14.45 hours, sunlight shot through the clouds after a brief shower of rain and a piercing beam of light lit the landscape. The wind dropped, and it became quite hot. The bird opened its bill slightly and then rapidly moved its throat breathing. Presently, the clouds covered the sky and it became suddenly cool. The bird closed its bill. At 15.04 hours, the bird raised itself, turned the egg with the ventral part of the lower mandible, and with a slight backward movement and then a deliberate forward action combined in one, settled down on the egg in straddled squatting pose. Quite unlike a Sarus Crane which first stands over the nest and egg and then squats down to it vertically, the bustard straddles the egg sitting on its tarsi before settling on the egg. I have also noticed this with the hen Lesser Florican. I noticed that, when the bustard settles on its egg, the egg lies slightly rear of the breast, or it seems so on account of the long overlapping neck plumes.

A spell of sunlight fell through the clouds at 15.17 hours and I noticed that the mantle of the bird was raised, the bill slightly open, and the gular region moving rapidly. I saw another movement. The bird turned its neck and head round facing the tail and

pecked at the feathers of the scapula, picking some louse-like animal and swallowing it. After this, it commenced to preen the mantle, inner shafts of secondaries and primaries, and then the lesser wing-coverts and the bastard-wing all while sitting. The bird appeared quite at ease raising the neck, looking round, and listening.

At 18.16 hours, the bustard left the nest for feeding. It walked slowly and, when it flushed a locust or grasshopper, it would follow it, look down, and with a sudden lowering of the head catch it and swallow it. It would sometimes run to catch an insect which had flown up. Yet the bird was not as active as I have seen other non-nesting bustards when feeding. I also noticed that food was scarce. The bird fed in a circular manner on the west side of the boat-pile only to disappear over 'north rise'.

'A' and 'B' continued the watch from the observation post. The bird, returning from 'north rise' at 19.00 hours, settled on the nest by 19.20 hours. Soon after, farmers were seen returning homewards. At 22.00 hours, rain fell intermittently with heavy downpours during the night.

17 August was a cloudy morning with a slight drizzle which ceased at 6.45 hours. The absence of predatory animals such as Jackals, Wolves, and Foxes in the vicinity of the nest was surprising. So far we had seen none, although signs of their droppings were noticed in gullies and in the forest stand. Chinkaras were regularly seen in the nest area and a single female Blackbuck. It was observed that the bustard did not leave the nest while the feeding flights of crows were in swing or when the sound of a crow cawing in the distance was heard. At 8.16 hours, the bird left the nest and gradually walked away to the north. Ten minutes later a crow cawed in the distance. Immediately the hen bird came back over the 'north rise' and walked towards the boat-pile. The crow soon appeared, flying straight towards the nest. The bustard moved into the boat-pile—I again realised how amazingly quickly a bustard can walk when it wants to. Breaking speed, the crow circled over the boat-pile. The bustard puffed its feathers and in the characteristic aggressive manner stabbed at the flying crow. The crow settled close by and after a time flew towards us. It circled over our heads and then departed. At 9.10 a strong breeze commenced and low rain clouds began to pass by. At 9.42 hours, when the weather had changed to cloudy-bright, we approached the nest talking, following the cart road. I was hoping the bird was not on the nest, but we found it present. With head pressed in and down it huddled low.

When we reached the hide there was a shuffling movement, the two wing shoulders pressed tight by the side moved alternately once and then twice, and suddenly the bird flew off the nest with the legs dangling for a time; and then in a slight zigzag flight it shot away low—a distraction display which I recognized as an attempt to draw us away from the nest. The bird alighted 150 yards or more behind some bushes. I entered the hide at 10.12 hours, and sent the men away to the east. Soon after the bustard approached, moving fairly quickly, and stopped in the boat-pile where I could not see it. Suddenly, the head appeared over a bush. Then it went down and reappeared, reminiscent of a crocodile's head surfacing in water. The head went down again and came up behind a tuft of grass. For a minute the bird, almost invisible except for a slight movement of the head, stared at the hide. Then it walked slowly and erect on top of the boat-pile and down to the right side to enter the nest gracefully. Inside the hide, I tapped the wooden side and whistled. This made no difference. Before entering the hide I had turned the egg cross-wise of the oval scrape-nest. On straddling the egg the bird immediately turned the egg with its bill so that it again lay lengthwise of the oval, and then settled down. This was at 11.05 hours. At 12.35 hours light rain commenced, and later came a downpour with gusty winds. At 13.45 hours, when the rain had stopped, the bird rose from its nest, walked away a few feet, and raising its neck and crown feathers and also the mantle and scapulars gave itself a good shaking. It then stood for a while with slightly open wings and walked slowly away. It had no appetite, for when a small grasshopper got up in front of it, it made no attempt to pursue but walked listlessly, now and then trying half-heartedly to catch an insect. 18 minutes later it returned, passing within 10 feet of the hide and giving me a very close view. Entering the nest at 14.12 hours it incubated steadily till 15.23 without a movement except of the head. Soon after I vacated the hide, leaving my observers on duty.

After a shower of rain in the evening the bird was again seen to leave the nest, shake itself, and preen its feathers, and after feeding leisurely close by it returned to the nest at 19.06 hours. An after-sunset glow brightened the sky. A pair of Great Horned Owls was seen perched on boulders. Hares came out on the cart road, and Sykes's Crested Larks, Lesser Floricans, and Painted Francolins called incessantly until darkness fell.

On 18 August at dawn the watch was resumed. I took over at

8.15 hours. At 8.34 hours the bustard left the nest, and I walked over and again changed the position of the egg. I re-entered the hide at 9.00 hours. At 9.15 hours, a crow approached from the west. Immediately I heard the alarm *hook* of the bustard, and the bustard came flying low over the rise towards the boat-pile and the crow disappeared. The bustard walked up to the boat-pile and stood on the ridge. Rain-clouds darkened the sky. At 10.24 I heard the hoot of a Great Horned Owl and this call was repeated till 10.50 at intervals of 5, 8, 6, and 7 minutes. Rain Quail were calling too. At 10.54 hours the hen bird walked into the nest and, immediately turning the egg lengthwise of the scrape, sat in a semi-squatting pose. Bending its neck, it placed its ear close to the egg as if listening to the chick inside. Turning its face the other side it again 'listened' and after moving the egg slightly backwards settled down.

At 11.22 hours, I heard close by the double booming sound of a cock bustard. The hen bustard reacted by raising its head and listening. Again the double boom was heard. The hen bird stretched her neck high and turning the head looked round in almost a circle. She kept on listening and turning her head, and at 11.40 hours walked off in the direction from where the cock had boomed. At 12.11 I was relieved from the hide. However, I had seen the cock bustard displaying, and the hen approaching within 50 yards of the cock though they did not meet.

At 13.30 hours the bird returned to the nest cautiously. Some vultures were flying high and I saw the bustard turn its head slantingly upwards. Quite suddenly it withdrew its head, pressing it down, and froze, the eyes looking slightly upwards. A White-eyed Buzzard-Eagle was soaring, but lower down a Short-toed Eagle was gliding. As soon as the latter passed the nest area up went the head and neck of the bustard. At 14.23 hours the bird without giving any warning crept off the nest and hid behind the boat-pile and returned after a short interval. I failed to discover what had disturbed it. After some time the bird placed a small dry stick the size of a match on its scapulars and picking up what seemed like a dead bee placed it next to the stick. I also noticed it pecking at a twig of a dry Saddler's Plant and at some dry grass at the side of the nest restlessly. Was it bored, I wondered, and trying to amuse itself? Dark clouds gathered and threatened heavy rain. A cool strong wind commenced to blow and it became dark and gloomy. As my men approached to relieve me the bird crouched